

APPLICATION CLAIMS

1-76. (Cancelled)

77. (New) A composition for polishing a substrate surface having at least one feature thereon comprising a noble metal, a noble metal alloy, a noble metal oxide, or any combination thereof, comprising:

periodic acid and an abrasive in a combined amount sufficient to render the substrate surface substantially planar upon chemical-mechanical polishing thereof, wherein periodic acid is in an amount from about 0.05 to about 0.3 moles/kilogram;

said composition having a pH selected from a group consisting of a pH from about pH 1 to less than pH 2 and a pH from above pH 5 to about pH 10.

78. (New) The composition of claim 77, wherein periodic acid is in an amount from about 0.075 to about 0.3 moles/kilogram.

79. (New) The composition of claim 77, wherein periodic acid is in an amount from about 0.075 to about 0.175 moles/kilogram.

80. (New) The composition of claim 77, wherein the abrasive is in an amount from about 0.2 to about 6 weight percent.

81. (New) The composition of claim 77, wherein the abrasive is in an amount from about 0.2 to about 4 weight percent.

82. (New) The composition of claim 77, wherein the pH is from about pH 6 to about pH 10.

83. (New) The composition of claim 77, further comprising a pH-adjusting agent.

84. (New) The composition of claim 83, wherein the pH-adjusting agent is selected from a group consisting of a quaternary amine, an inorganic base, and any combination thereof.

85. (New) The composition of claim 83, wherein the pH-adjusting agent comprises an agent selected from a group consisting of tetramethylammonium hydroxide, ammonium hydroxide, potassium hydroxide, sodium hydroxide, and any combination thereof.

86. (New) The composition of claim 77, further comprising a suspension agent.

87. (New) The composition of claim 86, wherein the suspension agent comprises an agent selected from a group consisting of an organic acid, a surfactant, another abrasive, and ethyl carbonate.

88. (New) The composition of claim 77, wherein the abrasive comprises an abrasive having a Mohs hardness number of greater than about 6.5.

89. (New) The composition of claim 77, wherein the abrasive comprises an abrasive selected from a group consisting of alumina, silica, zirconia, spinel, zirconium nitride, carbide, and any combination thereof.

90. (New) The composition of any of claims 77 through 86, wherein the abrasive comprises alumina.

91. (New) The composition of any of claims 77 through 86, wherein the feature comprises a material selected from a group consisting of Ir, IrO₂, Pt, and any combination thereof.

92. (New) The composition of claim 77, wherein said combined amount is sufficient to provide the substrate surface with a WWNU of less than about 12%.

93. (New) The composition of claim 77, wherein said combined amount is sufficient to provide the substrate surface with a WTWNU of less than about 5%.

94. (New) A composition for polishing a substrate surface having at least one feature thereon comprising a noble metal, a noble metal alloy, a noble metal oxide, or any combination thereof, comprising:

periodic acid in an amount from about 0.05 to about 0.3 moles/kilogram; and

an abrasive in an amount from about 0.2 to about 6 weight percent;

said composition having a pH selected from a group consisting of a pH from about pH 1 to less than pH 2 and a pH from above pH 5 to about pH 10.

95. (New) The composition of claim 94, wherein the amount of periodic acid is from about 0.075 to about 0.3 moles/kilogram.

96. (New) The composition of claim 94, wherein the amount of periodic acid is from about 0.075 to about 0.175 moles/kilogram.

97. (New) The composition of claim 94, wherein the amount of the abrasive is from about 0.2 to about 4 weight percent.

98. (New) The composition of claim 94, wherein the pH is from about pH 6 to about pH 10.

99. (New) The composition of claim 94, further comprising a pH-adjusting agent.

100. (New) The composition of claim 99, wherein the pH-adjusting is selected from a group consisting of a quaternary amine, an inorganic base, and any combination thereof.

101. (New) The composition of claim 99, wherein the pH-adjusting agent comprises an agent selected from a group consisting of tetramethylammonium hydroxide, ammonium hydroxide, potassium hydroxide, sodium hydroxide, and any combination thereof.

102. (New) The composition of claim 94, further comprising a suspension agent.

103. (New) The composition of claim 102, wherein the suspension agent comprises an agent selected from a group consisting of an organic acid, a surfactant, another abrasive, and ethyl carbonate.

104. (New) The composition of claim 94, wherein the abrasive comprises an abrasive having a Mohs hardness number of greater than about 6.5.

105. (New) The composition of claim 94, wherein the abrasive comprises an abrasive selected from a group consisting of alumina, silica, zirconia, spinel, zirconium nitride, carbide, and any combination thereof.

106. (New) The composition of any of claims 94 through 102, wherein the abrasive comprises alumina.

107. (New) The composition of claim 94, wherein said composition provides the substrate surface with a WWNU of less than about 12% upon chemical-mechanical polishing thereof.

108. (New) The composition of claim 94, wherein said composition provides the substrate surface with a WTWNU of less than about 5% upon chemical-mechanical polishing thereof.

109. (New) The composition of any one of claims 94, 107, and 108, wherein the feature comprises a material selected from a group consisting of Ir, IrO₂, Pt, and any combination thereof.